

IMMIGRANT LEPIDOPTERA TO THE BRITISH ISLES CAUGHT IN ROTHAMSTED INSECT SURVEY LIGHT-TRAPS IN 1993 AND 1994

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Introduction

THE ROTHAMSTED Insect Survey (RIS) operates approximately 90 light-traps of a standard design (Williams, 1948), as part of a national network established during the 1960s to study insect population dynamics and the effects of environmental change (Taylor, 1986; Woïwod & Harrington, 1994). From the daily samples collected by these traps, all macrolepidoptera and some microlepidoptera are identified and counted and the records of species of particular individual interest to lepidopterists are regularly published (e.g. Riley, 1993).

Readers of this journal will be familiar with the annual reviews of immigrant Lepidoptera (e.g. Skinner & Parsons, 1997; 1998) which present collated records submitted by Lepidoptera recorders and collectors throughout the British Isles. In order to complement these reports it is considered desirable to publish records of immigrant species caught in the RIS light-traps as soon as all data are available. It is proposed to do so annually starting with an account of 1993 and 1994.

For the less common species, individual records are cited giving date and site of capture, numbers caught and other details. For ease of reading, the localities of each site are tabulated at the end of the paper. Details of the more common species are tabulated with comparative information from previous years. Unless otherwise stated, all identifications were made by the author. The nomenclature follows that of Bradley (1998).

Records of less common immigrant species in 1993

Numbers caught and identifiers other than the author are given in brackets.

GEOMETRIDAE

The Vestal *Rhodometra sacraria* (L.) – Jersey, 19.8 (one); 27-30.8 (one).

ARCTIIDAE

Speckled Footman *Coscinia cribraria* (L.) ssp. *arenaria* (Lempke) – Guernsey, 16-18.7 (one). (W. Angel)

NOCTUIDAE

Great Brocade *Eurois occulta* (L.) – Castle Eden Dene II, 14.8 (one) and 11.9 (one); Chopwell, 2-4.9 (one.) (T.C. Dunn); Sparsholt, 1.11 (one). (A. Dobson).

The Delicate *Mythimna vitellina* (Hb.) – Guernsey, 24-26.9 (one). (W. Angell). This species is now suspected of being resident in Guernsey (R. Austin, *pers. comm.*).

Flame Brocade *Trigonophora flammea* (Esper) – Guernsey, 5-7.10 (one) and 27.10 (one). This species is caught regularly in the RIS trap in Guernsey and may now be resident there.

Orache Moth *Trachea atriplicis* (L.) – Jersey, 13-29.7 (five). This species is now suspected of being resident in Jersey (R. Burrow, *pers. comm.*).

Records of less common immigrant species in 1994

GEOMETRIDAE

The Vestal *Rhodometra sacraria* (L.) – Alice Holt, 4.8 (one); Llysdynam, 24.8 (one); Starcross, 8.8 (one); 23.8 (two); 26-29.8 (one) (A. Dobson); Yarnar Wood, 31.7 (one), 10.8 (one); Ewingswode, 3.8 (one); Wisley, 19.8 (one) (A. Halstead); Denny Lodge, 1.8 (one); Sheppey, 23.8 (one) (G. Burton); Winchester, 22.8 (one), 27-28.8 (one); Lydd, 22.8 (one); Warehorne, 3.8 (one), 2.9 (two); Sparsholt, 5.8 (one), 6.8 (one) (A. Dobson); Bentley Wood, 23.8 (one) (B. Fox); Aberporth, 5-9.8 (one) (I. Tillotson); Jersey, 5-7.9 (one); Porton Down, 4.8 (one), 22.8 (one).

The Gem *Orthonama obstipata* (Fabr.) – Lydd, 24.9 (one); Jersey, 10/11.5 (one); Lanhydrock, 21.8 (one), 6.11 (one).

SPHINGIDAE

Hummingbird Hawk-moth *Macroglossum stellatarum* (L.) – Rhandirmwyn, 6.8 (one).

NOCTUIDAE

Great Brocade *Eurois occulta* (L.) – Stainton, 20.7 (one), 23.7 (one), 2.8 (one) (T.C. Dunn)

Flame Brocade *Trigonophora flammea* (Esper) – Guernsey, 11.10 (one), 13.10 (one), 14-16.10 (one) (W. Angell).

Bordered Straw *Heliothis peltigera* (D.& S.) – Spurn Head, 14.7 (one) (B. Spence); Starcross, 18.8 (one) (A. Dobson); Wisley, 25.8 (one) (A. Halstead); Cockayne Hatley, 3.8 (one) (I.P. Woiod); Perry Wood, 7.9 (one) (J. Badmin); Lydd, 30.8 (one), 27.9 (one).

	H	L	AM	1993			1994		
				N	S	M	N	S	M
Silver Y	4,434 (1975)	330 (1972)	17.6	641	88	7.28	4,262	90	47.4
Diamond-back	14,578 (1973)	523 (1985)	67.7	1,849	72	25.68	6,706	74	90.62
Rusty-dot Pearl	1,746 (1980)	0 (1972)	2.4	18	72	0.25	619	74	8.36
Rush Veneer	452 (1983)	2 (1972;77)	1.3	3	72	0.04	498	74	6.73

Table 1. Immigrant Lepidoptera in Rothamsted Insect Survey light-traps in 1993 and 1994.

H = Highest annual total, 1970-1990. L = Lowest annual total, 1970-1990; AM = Annual mean per site examined, 1970-1990; N = Annual totals, 1993 and 1994; S = Number of sites examined, 1993 and 1994; M = mean per site examined, 1993 and 1994.

Records of common immigrant species

The Silver Y *Autographa gamma* (L.), Diamond-back *Plutella xylostella* (L.), Rusty-dot Pearl *Udea ferrugalis* (Hb.) and Rush Veneer *Nomophila noctuella* (D. & S.) are usually caught in RIS light-traps in numbers large enough to make the listing of individual records impractical. However, it is important to record them as they give a general indication of the strength of

migrant activity. Further, the Silver Y and the Diamond-back are known to be agricultural pests (Carter, 1984). Many collectors and recorders do not operate traps every night and are often not prepared routinely to count large numbers of individuals, whereas the standard equipment and methodology employed by the Rothamsted Insect Survey lends accuracy to this exercise. For each species the annual mean per site and the highest and lowest annual totals for the twenty-year period 1970 to 1990 is given in Table 1. These figures offer a useful yardstick by which to compare the general extent of immigration in any given year.

The four frequently-recorded immigrant species clearly were relatively scarce in 1993 but more common than usual in 1994. This generally stronger immigration in 1994 is also reflected by the substantially larger numbers of scarcer species caught compared with 1993.

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Appendix 1. Localities of trap sites referred to in the text. The RIS site number and the identifier (if not the author) are given in brackets.

Aberporth	498	Cardiganshire	SN 240 521	(Ian Tillotson)
Alice Holt	46	Hampshire	SU 803 428	(Tim Winter)
Bentley Wood	487	Wiltshire	SU 253 324	(Barry Fox)
Castle Dene II	484	Durham	NZ 427 393	(Tom Dunn)
Chopwell	481	Durham	NZ 136 582	(Tom Dunn)

Cockayne Hatley	336	Bedfordshire	TL 253 494	(Ian Woiwod)
Denny Lodge	268	Hampshire	SU 333 056	(Ian Tillotson)
Embleton	464	Northumberland	NU 232 227	(Betty Dodd)
Ewingswode	277	Huntingdonshire	TL 200 797	
Lanhydrock	550	Cornwall	SX 099 636	
Llysdinam	111	Radnorshire	SO 009 582	
Lydd	462	Kent	TR 044 203	
Perry Wood	451	Kent	TR 046 562	(John Badmin)
Porton Down	555	Wiltshire	SU 204 372	
Rhandirmwyn	346	Carmarthenshire	SN 782 441	
Sheppey	370	Kent	TQ 949 739	(Geoff Burton)
Sparsholt	483	Hampshire	SU 426 318	(Tony Dobson)
Spurn Head	131	Yorkshire	TA 419 150	(Barry Spence)
Stainton	521	Durham	NZ 072 187	(Tom Dunn)
Starcross	149	Devon	SX 972 821	(Tony Dobson)
Warehorne	478	Kent	TQ 988 346	
Winchester	379	Hampshire	SU 517 339	
Wisley	289	Surrey	TQ 065 579	(Andrew
Halstead)				
Yarner Wood	266	Devon	SX 786 788	

Two further traps are cited which are not on the Ordnance Survey Grid Reference system: Jersey (Site 547), Howard Davis Farm, Trinity, Jersey, Channel Islands. Guernsey (Site 252), States Horticultural Advisory Service, St. Martin's, Guernsey, Channel Islands.

Two unusual micro moths for Somerset

On 9 July 1999, I caught an example of the pyralid moth *Calamotropha paludella* (Hb.) at Berrow, North Somerset (vice-county 6). Goater (1986. *British Pyralid Moths*. Harley Books) does not list Somerset for this species; he states that it is found in Norfolk, Suffolk, Cambridgeshire, Essex, Kent, Hampshire, Dorset and the Isle of Wight, with occasional wanderers turning up elsewhere. This record would appear to be the first for Somerset and it is interesting to note that the species was also recorded as new to Gloucestershire at around the same time this year (see *Newsletter of the Gloucestershire Moth Group*).

On 5 July 1998, D.F. Miller brought me a moth which I identified as *Monochroa palustrella* Douglas (Gelechiidae). This species is generally restricted to the south-east in England, although there is a 1965 record from South Somerset at Selworthy, made by the late Dr H.M. Chappel of Minehead and published in *Proc. Somerset Arch. nat. Hist. Soc.* for that year (John Robbins, pers. comm.).—BRIAN E. SLADE, 40 Church House Road, Berrow, Somerset TA8 2NQ.